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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TAKAOKA, DEAN O

ART UNIT PAPER NUMBER

2817

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/082,616

Applicant(s)

PERREAULT ET AL.

Examiner

Dean O Takaoka

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on April 24, 2003 (paper no. 6).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) 11-13,34,44 and 62-66 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-10,14-23,26-30,32,33,37-43,45-47,50-52 and 54-61 is/are rejected.
- 7) ☒ Claim(s) 24,25,31,35,36,48,49 and 53 is/are objected to.
- 8) ☐ Claim(s) 1-66 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,7. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, Species I in Paper No. 6 is acknowledged. The traversal is on the ground(s) that "it would not impose an undue burden on the Examiner to perform a search for the subject matter of claims 1-66". This is not found persuasive because the inventions of Group I and Group II would require different class and subclass examination, the inventions are distinct, and have divergent subject matter as indicated in the office action dated March 12, 2003, thus the restriction is maintained by the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

Claims 11 – 13, 34, 44, and 62 – 66 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Group II and nonelected Group I, Species II, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6.

Claim Objections

Claims 4 and 5 are objected to because of the following informalities:

The Examiner is unclear of the meaning with respect to the word "former". If the meaning of "former" is equivalent to "form", the Examiner suggests the word "form" used in place of "former".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3 – 5, 27, 33, 38 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Mullersman (U.S. Patent No. 4,577,145).

Claim 1:

Mullersman (Fig. 2) shows an electrical component comprising: a capacitor (C1 or C2) having first and second ends (shown by the circuit in Fig. 3); a circuit coupled to the capacitor (L and other C), the circuit including magnetically-coupled windings (inherent where any inductor is characterized by inductance; inductance characterized by N turns and flux; flux being magnetic) for providing capacitor-path inductance cancellation (col. 3, lines 48-51; where the capacitive and inductive reactance cancel out each other at resonance).

Claim 3:

Where the coupled windings are integrated with the capacitor (shown in Fig. 2 as windings integrated with the capacitor).

Claim 4:

Where the coupled windings are wound on a (in so far as can be understood) "form" 41).

Claim 5:

Where the form is substantially non-magnetic (41 is dielectric; col. 4, lines 42,43).

Claim 27:

A method of suppressing electrical signals comprising: coupling an inductively coupled winding circuit (L – Fig. 2) to a capacitor (C) for nullifying an inductance of the capacitor electrical path (col. 3, lines 48-51, discussed in the reasons for rejection of claim 1 above).

It is the position of the Examiner that the "method" recited in the preamble breathes no life into the claim and is generic defining the final product, thus the final product of the prior art inherently made by a method.

Claim 33:

Where the coupled windings are integrated with the capacitor (shown in Fig. 2 as windings integrated with the capacitor, discussed in the reasons for rejection of claim 3 above).

Claim 38:

A filter comprising: a capacitive element (C) and a circuit coupled to the capacitive element (circuit shown in Fig. 1), the circuit including coupled windings (L) for providing cancellation of the equivalent series inductance of the capacitor electrical path (col. 3, lines 48-51, discussed in the reasons for rejection of claims 1 and 27 above).

Claim 40:

Where the coupled windings are integrated with the capacitor (shown in Fig. 2 as windings integrated with the capacitor, discussed in the reasons for rejection of claims 3 and 33 above).

Claims 1, 2, 4, 14 – 16, 27, 32, 38, 39, and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujimura et al. (U.S. Patent No. 5,495,405).

Claim 1:

Fujimura et al. (Figs. 1,2,4) shows an electrical component comprising: a capacitor (i.e. secondary side capacitor 5 – Fig. 1) having first and second ends (shown by the circuit in Fig. 1); a circuit coupled to the capacitor, the circuit including magnetically-coupled windings (e.g. transformer 1, inherent where any inductive component is characterized by inductance; inductance characterized by N turns and flux; flux being magnetic) for providing capacitor-path inductance cancellation (col. 8, lines 4-6; where the secondary side capacitive and inductive component cancel out with each other).

Claim 2:

Where the coupled windings are discrete windings (primary windings PW and secondary windings SW wound on bobbin – Fig. 4).

Claim 4:

Where the coupled windings are wound on a (in so far as can be understood) “form” (bobbin – Fig. 4; col. 6, line 37 to col. 7, line 5).

Claim 14:

Where the component has three terminals (where Fig. 2 shows three terminals for the component comprising transformer 1 and capacitor 5).

Claim 15:

Where the coupled windings include first (SW1) and second (PW1) coils and a first terminal (IN1) coupled to a first end of the first coil (where IN1 is coupled to winding SW1's first terminal, adjacent to inductor 2) and a first end of the second coil (PW1 connecting TR1 and C2), a second terminal (IN2) coupled to a second end of the second coil (PW1 to ground), where the second end of the capacitor is coupled to a second end of the first coil (second end of capacitor 5, to ground, coupled to the second end of SW1, also to ground).

Claim 16:

Where a third terminal is connected to the first end of the capacitor (thru inductor 2).

Claim 27:

A method of suppressing electrical signals comprising: coupling an inductively coupled winding circuit (transformer 1 – Figs. 1 and 2) to a capacitor (5) for nullifying an inductance of the capacitor electrical path (discussed in the reasons for rejection of claim 1 above).

It is the position of the Examiner that the “method” recited in the preamble breathes no life into the claim and is generic defining the final product, thus the final product of the prior art inherently made by a method.

Claim 32:

Where the coupled windings are discrete windings (primary windings PW and secondary windings SW wound on bobbin – Fig. 4, discussed in the reasons for rejection of claim 2 above).

Claim 38:

A filter comprising: a capacitive element (capacitor 5) and a circuit coupled to the capacitive element (circuit shown in Fig. 1), the circuit including coupled windings (PW1 and SW1) for providing cancellation of the equivalent series inductance of the capacitor electrical path (where series choke coil 2 creates series resonance with the parasitic capacitances and tuning capacitor 5 – col. 5, line 52 to col. 6, line 5).

Claim 39:

Where the coupled windings are discrete windings (primary windings PW and secondary windings SW wound on bobbin – Fig. 4, discussed in the reasons for rejection of claims 2 and 32 above).

Claim 45:

Where the component has three terminals (where Fig. 2 shows three terminals for the component comprising transformer 1 and capacitor 5, discussed in the reasons for rejection of claim 14 above).

Claims 1, 3, 9, 10, 14 – 23, 26 – 30, 33, 37, 38, 40, 42, 43, 45 – 47, 54, and 55 are rejected under 35 U.S.C. 102(e) as being anticipated by Uchida et al. (U.S. Patent No. 6,476,689), prior art disclosed by the Applicant.

Claim 1:

Uchida et al. (best shown in Fig. 4) shows an electrical component comprising: a capacitor (C) having first and second ends (shown by the circuit in Fig. 4); a circuit coupled to the capacitor, the circuit including magnetically-coupled windings (L1, L2; inherent where any inductive component is characterized by inductance; inductance characterized by N turns and flux; flux being magnetic) for providing capacitor-path inductance cancellation (col. 2, lines 8-19 and col. 6, lines 28-50).

Claim 3:

Where the windings are integrated with the capacitor (Figs. 3 – 5; where capacitor electrode plate 10 is integrated with windings L1 and L2).

Claim 9:

Where the coupled windings include a structure having an air core (where circular windings L1 and L2 have a central hollow core; Figs. 1B, 2B, 3, 5B, et al.).

Claim 10:

Where the coupled windings include a magnetic material (11).

Claim 14:

Where the component has three terminals (Fig. 1A, 1B, 4, et al.)

Claims 15 and 17:

Where the coupled windings include first (L1) and second (L2) coils and a first terminal (12a) coupled to a first end of the first coil and a first end of the second coil (where 12a is coupled to L2 thru L1), a second terminal (12b) coupled to a second end of the second coil, where the second end of the capacitor is coupled to a second end of

the first coil (second end of capacitor C is coupled to the second end of L1); (claim 17)
and to a first end of the second coil (where capacitor C is coupled to the first end of L2).

Claims 16 and 19:

Where a third terminal is coupled to the first end of the capacitor (ground terminal coupled to the first end of C).

Claim 18:

Where the first and second coils are constructed as a single coil with a tap
(where coil elements L1 and L2 form a single coil with a tap illustrated by the circuit in
Fig. 4)

Claim 20:

Where the coupled windings (L1, L2) are wound about a package containing a
capacitor (10 – Figs. 1A and 5A).

Claim 21:

Where the coupled windings generate a negative equivalent inductance in series
with the capacitor ($-M$ or mutual inductance – Fig. 4)

Claim 22:

Where the induction of the mutually coupled windings generates a voltage the
counteracts the voltage due to the equivalent series inductance of the capacitor (where
Uchida et al. teaches attenuation versus frequency, col. 8, line 63 – col. 9, line 28; thus
inherently where the voltage is applied to mutually coupled windings and further
counteracting the voltage due to the equivalent series inductance of the capacitor since

the cancellation of inductance and minimization of capacitance are previously discussed – col. 2, lines 8-19).

Claim 23:

Where the coupled windings are formed from a single tapped winding (center tap shown in Fig. 4)

Claim 26:

Where the coupled windings have a mutual inductance (M) that is substantially of the same magnitude as the equivalent series inductance (ESL) of the capacitor plus any interconnect inductance (col. 6, lines 42-50).

Claim 27:

A method of suppressing electrical signals comprising: coupling an inductively coupled winding circuit (L1 and L2 – Fig. 4) to a capacitor (C) for nullifying an inductance of the capacitor electrical path (col. 2, lines 8-19 and col. 6, lines 28-50, discussed in the reasons for rejection of claim 1 above).+

It is the position of the Examiner that the “method” recited in the preamble breathes no life into the claim and is generic defining the final product, thus the final product of the prior art inherently made by a method.

Claim 28:

Including modeling the winding circuit with a T model (T model shown by the circuit in Fig. 4) having a first leg (L1), a second leg (L2) and a third leg (tap to C and ground), where the third leg is coupled to the capacitor.

Claim 29:

Including providing the third leg with a negative inductance ($-M$ shown in Fig. 4).

Claim 30:

Including modeling the capacitor as having a capacitance and an equivalent series inductance (ESL), which is cancelled by the negative inductance ($-M$) of the third leg of the T model (col. 8, lines 42-50, discussed in the reasons for rejection of claims 1 and 27 above).

Claim 33:

Further integrating the capacitor (10) and the winding circuit (Figs. 3 – 5; where capacitor electrode plate 10 is integrated with windings L1 and L2, discussed in the reasons for rejection of claim 3 above).

Claim 37:

Where the magnitude of a mutual inductance (M) of the coupled windings substantially equal to the equivalent series inductance (ESL) of the capacitor electrical path (col. 6, lines 42-50).

Claim 38:

A filter comprising: a capacitive element (C) and a circuit coupled to the capacitive element (circuit shown in Fig. 4), the circuit including coupled windings (L1 and L2) for providing cancellation of the equivalent series inductance of the capacitor electrical path (col. 2, lines 8-19 and col. 6, lines 28-50, discussed in the reasons for rejection of claims 1 and 27 above).

Claim 40:

Where the windings are integrated with the capacitor (Figs. 3 – 5; where capacitor electrode plate 10 is integrated with windings L1 and L2, discussed in the reasons for rejection of claim 3 above).

Claim 42:

Where the coupled windings include a structure having an air core (where circular windings L1 and L2 have a central hollow core; Figs. 1B, 2B, 3, 5B, et al., discussed in the reasons for rejection of claim 9 above).

Claim 43:

Where the coupled windings include a magnetic material (11, discussed in the reasons for rejection of claim 10 above).

Claim 45:

Where the component has three terminals (Fig. 1A, 1B, 4, et al., discussed in the reasons for rejection of claim 14 above).

Claim 46:

Where the coupled windings (L1, L2) are wound about a package containing a capacitive element (10 – Figs. 1A and 5A., discussed in the reasons for rejection of claim 20 above).

Claim 47:

Where the magnitude of the mutual inductance (M) of the coupled windings is substantially equal to the equivalent series inductance (ESL) of the capacitive element plus any interconnect inductance (col. 6, lines 42-50, discussed in the reasons for rejection of claim 26 above).

Claim 54:

An electrical circuit (Fig. 11) comprising: a first conductor (L1 + L2) having first (L1) and second portions (L2) configured such that the first and second conductor portions are magnetically coupled (B1 and B2); and a pair of capacitively coupled conductors (also L1 and L2 coupled thru C; Fig. 13 having the same circuit as Fig. 4 – col. 10, lines 14-28), where the first conductor is coupled to a first one of the pair of conductors such that the magnetic induction of the first conductor nullifies effects to the equivalent series inductance path from the first conductor through the pair of inductors (col. 6, lines 28-50 and col. 10, lines 14-28).

Claim 55:

Where a first end of the first conductor (L1 + L2) is coupled to a terminal (12a with respect to Fig. 4), a second end of the first conductor is coupled to a second terminal (12b), an intermediate portion of the first conductor (between L1 and L2) is coupled to the first one of the pair of conductors (L1), and a second one of the pair of conductors is coupled to a third terminal (ground 13).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 – 8, 10, 41, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mullersman in view of Waffenschmidt et al. (U.S. Patent No. 6,529,363).

Claim 6:

Mullersman shows the component, discussed in the reasons for rejection of claim 1 above, but is silent where the coupled windings are formed on a foil.

Waffenschmidt et al. (Figs. 7 and 8) shows a similar L and C component where the coupled windings are formed on a foil (12 – Waffenschmidt et al.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the component disclosed by Mullerman with the specific technique of forming the coupled windings on foil disclosed by Waffenschmidt et al. Such a modification would have realized the advantageous benefit of providing means to integrate capacitors with the coupled windings proving space savings and low cost (col. 1, lines 31-43 – Waffenschmidt et al.) thus suggesting the obviousness of the modification.

Claims 7 and 41:

Where the coupled windings are formed on a flexible material (e.g. foil – Waffenschmidt et al.).

Claim 8:

Where the coupled windings are formed on a printed circuit board (where Waffenschmidt et al. discloses an alternative arrangement such as on a board – col. 3, lines 64-67).

Claims 10 and 43:

Where the coupled windings include a magnetic material (7; where Waffenschmidt et al. discloses a ferrite core – col. 3, lines 58,59).

Claims 10 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimura et al. in view of Chang et al. (U.S. Patent No. 6,239,557).

Claims 10 and 43:

Fujimura et al. teaches the component, discussed in the reasons for rejection of claim 1 above, further teaching a transformer (1) wound on a bobbin and having a well-known rod or core (11) inserted into the transformer, e.g. bobbin, but does not teach the specific material of the core such as a well-known magnetic core material.

Chang et al. (Fig. 3) shows a similar component comprising a transformer (150) wound on a bobbin and having a specific core material such as a well-known art-recognized equivalent magnetic core material such as ferrite (col. 2, lines 1-4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the generic core material disclosed by Fujimura et al. with the well-known art-recognized equivalent magnetic core material disclosed by Chang et al. Such a modification would have been a mere substitution of well-known art-recognized equivalent core materials; further to increase the inductive coupling of the transformer (Chang et al. – col. 2, lines 2-3) thus suggesting the obviousness of the modification.

Claims 50 – 52, 56 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al., prior art disclosed by the Applicant in view of Hamill et al. (A ‘Zero” Ripple Technique Applicable To Any DC Converter), prior art disclosed by the Applicant.

Claim 50:

Uchida et al. teaches the electrical component comprising a capacitively coupled conductor, discussed above in the reasons for rejection of claims 1, 27 and 38 above but does not teach a first and second pair of substantially capacitively coupled conductors.

Hamill et al. (Fig. 5) shows a similar component comprising a first (Lin) and second (Lout) pair of substantially capacitively coupled conductors (where Fig. 5 of Hamill et al. is an embodiment of Fig. 1, Fig. 1 having an equivalent circuit shown in Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the component disclosed by Uchida et al. with the first and second pair of substantially capacitively coupled conductors disclosed by Hamill et al. Such a modification would have realized the advantageous benefit of providing a low-ripple boost-buck converter smoothing transformer (Hamill et al. – Fig. 5) providing “zero ripple” desirable for low noise thus suggesting the obviousness of the modification.

Claim 51:

Hamill et al. (Fig. 5) shows where each of the conductors in the second pair of conductors (Lout) is electrically coupled to a first terminal (Vin), a first conductor of the second pair of conductors is electrically coupled to a second terminal (Vout), a second conductor of the second pair of conductors is electrically coupled to a first conductor of the first pair (where all conductors are electrically coupled to each terminal and each other), and a second conductor of the first pair of conductors is electrically coupled to a third terminal (Lb with respect to equivalent circuit in Fig. 2)

Claim 52:

Uchida et al. (Fig. 8a – Fig. 11) shows where the first one of the conductors of the first pair of conductors and a second one of the conductors in the second pair of conductors is formed from a single conductor (Figs. 8A - 11).

Claim 56:

Uchida et al. teaches the electrical component comprising a capacitively coupled conductor, discussed above in the reasons for rejection of claims 1, 27 and 38 above but does not teach a first subcircuit and a second subcircuit coupled to the first subcircuit.

Hamill et al. (Fig. 5) shows a similar component comprising a first (Lin) and second (Lout) subcircuit electrically coupled to each other (where Fig. 5 of Hamill et al. is an embodiment of Fig. 1, Fig. 1 having an equivalent circuit shown in Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the component disclosed by Uchida et al. with the first and second pair of substantially capacitively coupled conductors disclosed by

Hamill et al. Such a modification would have realized the advantageous benefit of providing a low-ripple boost-buck converter smoothing transformer (Hamill et al. – Fig. 5) providing “zero ripple” desirable for low noise thus suggesting the obviousness of the modification.

Claim 57:

Where the first subcircuit includes a capacitor (shown by the component of Uchida et al. and Hamill et al.)

Claims 58 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. and Hamill et al., prior art disclosed by the Applicant, as applied to claim 56 above, and further in view of Smith et al. (U.S. Patent No. 5,694,297).

Claims 58 and 59:

Uchida et al. and Hamill et al. teach the circuit, discussed above in the reasons for rejection of claim 56 above, but are silent where the coupled windings are formed on a printed circuit board (claim 58) and where the coupled windings are formed on an integrated circuit (claim 59).

Smith et al. shows a similar component circuit (DC-DC switching power supply such as buck-boost, Cuk – col. 6, lines 1-22) comprising coupled windings (218 – Fig. 3) are formed on a printed circuit board (obvious in that power supply 200 is formed in an integrated circuit) and where the coupled windings are formed on an integrated circuit (102).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have modified the component disclosed by Uchida et al. and Hamill et al. with the substrate and integrated circuit disclosed by Smith et al. Such a modification would have realized the advantageous benefit of providing high speed, high current demand IC chips and improving the packing density of the system and reducing thermal dissipation (Smith et al. – col. 2, lines 61-65) thus suggesting the obviousness of the modification.

Claims 60 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. and Hamill et al., prior art disclosed by the Applicant as applied to claim 56 above, and further in view of Waffenschmidt et al.

Claim 60 and 61:

Uchida et al. and Hamill et al. teaches the circuit, discussed in the reasons for rejection of claim 56 above, but is silent where the coupled windings are formed using a printing process (claim 60) or where the coupled windings are formed on a flexible material (claim 61).

Waffenschmidt et al. teaches a similar circuit component where the component the coupled windings are formed using CVD (col. 2, lines 11-17) and where the coupled windings are formed on a flexible material (foil – col. 1, lines 31-36).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the circuit disclosed by Uchida et al. and Hamill et al. with the specific coil forming disclosed by Waffenschmidt et al. Such a modification

would have been a mere physical implementation of the circuit component in a working device as is well-known in the art thus suggesting the obviousness of the modification.

Regarding the limitation “printing process” in claim 60, it is the position of the Examiner that the limitation is not given patentable weight in the product claim. Waffenschmidt et al. discloses a well-known art-recognized equivalent method of forming windings such as CVD. Regarding “product-by-process” claims, it should be noted that a “product-by-process” claim is directed to the product per se, no matter how such a product was made. It has been well established by the Courts that it is the patentability of the final product per se which must be determined in a “product-by-process” claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in “product-by-process” form or not.

See *In re Hirao*, 190 USPQ 15 at 17 (footnote 3); *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324, *In re Avery*, 186 USPQ 161; *In re Marosi et al.*, 218 USPQ 289; and in particular *In re Thorpe*, 227 USPQ 964. It should be noted that the applicant has the burden of proof in such cases, as the above case law makes clear.

Allowable Subject Matter

Claims 24, 25, 31, 35, 36, 48, 49, and 53 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

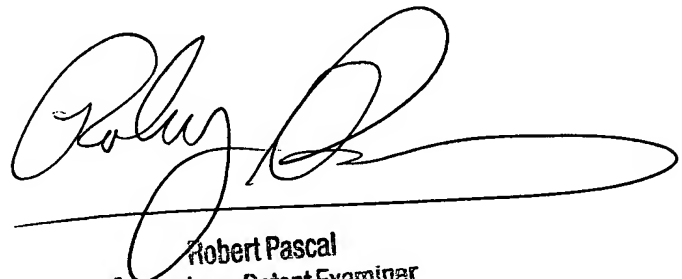
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O Takaoka whose telephone number is (703) 305-6242. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Dean O Takaoka
Examiner
Art Unit 2817

August 27, 2003



Robert Pascal
Supervisory Patent Examiner
Technology Center 2600